INLAND SEAS ENGINEERING

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June 16, 2003

VIA Registered US Mail

Mr. Philip Roycraft
District Supervisor
MDEQ-WMD
Cadillac District Office
120 W. Chapin
Cadillac, Michigan 49601-2158

Mr. Michael Stiffler
District Supervisor
MDEQ-SWQD
Cadillac District Office
120 W. Chapin
Cadillac, Michigan 49601-2158

Re: Consent Order No. 31-07-02
Compliance Program Sections IV(c.)(1.) and IV(c.)(3.)
Hydrogeologic Study Work Plan
Williamsburg Receiving & Storage
ISE Project # 02633061-22E

Gentlemen:

This communication is in response to the Michigan Department of Environmental Quality (DEQ) approval of a Hydrogeologic Study Work Plan (HSWP) Supplement, dated May 20, 2003 and prepared by Mr. Douglas D. Thompson. Attached for reference are two approval letters, one for the HSWP submitted on October 14, 2002 (approved January 14, 2003) and the above cited approval of the HSWP Supplement prepared in accordance with the January 14th approval.

Please note that Section IV(c.)(1.)(*v.*) provides that the implementation schedule for the HSWP allow for the Hydrogeological Report to be submitted within 180 days of the date WRS receives approval of the HSWP. Mr. Thompson states in his May 20, 2003 letter, that he has reviewed the HSWP Supplement and, "...approves the Work Plan dated May 1, 2003, ..." Mr. Thompson closes his approval letter by asking that I contact him directly if the Hydrogeological Report cannot be submitted by July 11, 2003.

I intend to contact Mr. Thompson directly in accordance with his expressed request, however since there is an apparent misstatement or misunderstanding of the submission date for the Report as required under the Consent Order, I believe it is prudent to write to you as well to state our understanding that the 180 days which Section IV(c.)(1.)(*v.*) speaks to begins on the date WRS receives approval of the HSWP. The date the approval letter was received by my office is May 30, 2003. When this fact is applied in context of the Consent Order, I note that the submittal date is November 26, 2003.

While we have initiated efforts to commence work that was approved in January, 2003, Mr. Thompson added considerably to the initial work scope we proposed. I do not believe it is possible to complete the recently approved work and write the report within the next 30 days. The schedule submitted with the October, 2002 HSWP included a 180 day schedule which commenced upon approval of the Work Plan from MDEQ. Since the work scope was essentially doubled by Mr. Thompson's request in January, I believe the November 26th submittal date is fair and correct, given the language in the Consent Order and the unambiguous schedule submittal in October 2002.

Please contact me if you have any questions regarding this attached.

Sincerely,
INLAND SEAS ENGINEERING, INC.

Andrew Smits, P.E.
Environmental Engineering
Department Manager

enc. HS Work Plan Approval Letters (January 14, 2003 and May 20, 2003)
cc: Mr. Christopher Hubbell- WRS
Joseph E. Quandt, Esq.- ZKDBT&Q
Edgar Roy, III Esq.- BFA&R

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STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

May 20, 2003

FILE COPY

Mr. Andrew Smits, P.E.
Inland Seas Engineering, Inc.
1755 Barlow Street
Traverse City, MI 49696-6820

Dear Mr. Smits:

SUBJECT: Hydrogeologic Study Work Plan Supplement
Williamsburg Receiving and Storage
Groundwater Discharge Permit # M 0086

We have completed our review of your May 1, 2003, Hydrogeologic Study Work Plan Supplement (Work Plan) for Williamsburg Receiving and Storage. In your Work Plan, you have agreed to install monitor wells at the following areas of the site: the former Spray Irrigation Area, the former Northwestern Brining Pit Area and the Storage Lagoon Area. I understand that in your professional opinion monitor wells are not necessary at the former Spray Irrigation Area or the Northwestern Brining Pit Area. We will just have to disagree on how best to evaluate whether the groundwater has been impacted at these locations. Installation of the monitor wells is a pragmatic approach to resolving this issue.

The Water Division, Groundwater Section has reviewed and hereby approves the Work Plan dated May 1, 2003, for Williamsburg Receiving and Storage. The Hydrogeologic Study Report should be submitted to this office by July 11, 2003. If this schedule can not be met please contact me directly at the number listed below.

Sincerely,

Douglas D. Thompson
Groundwater Section
517-335-3380

cc: Mr. Christopher Hubbell, WR&S
Mr. Joseph E. Quandt
Mr. Michael Stifler, DEQ -- Cadillac
Ms. Janice Heuer, DEQ -- Cadillac

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

January 14, 2003

Mr. Andrew Smits, P.E.
Inland Seas Engineering, Inc.
1755 Barlow Street
P.O. Box 6820
Traverse City, MI 49696–6820

FILE COPY

Dear Mr. Smits:

Your October 14, 2002 Hydrogeologic Study Work Plan prepared for Williamsburg Receiving and Storage, LLC (WRS) pursuant to Consent Order No. 31–07–02 was received in this office on December 12, 2002. The purpose of this letter is to provide you with our review comments of the Work Plan. Also included in this letter are additional hydrogeologic study requirements related to the request for issuance of a permit for the proposed groundwater discharge from WRS. Listed below are the review comments.

Hydrogeologic Study Target Areas

Field work was conducted during July 2002 at the former spray irrigation area and September 2002 at the former brine pit area located on the northwest portion of the site. The investigative assessment activities at these two locations were to determine whether groundwater has been impacted by the first quarter 2002 discharge at the irrigation field or by leaking or spillage from the brine pit area. The field work was based on the June 26, 2002 Work Plan which was submitted to the Cadillac District Office, Water Division (WD) staff for review. The Work Plan was never approved by WD staff and as a result, the field activities were conducted without any assurance that the methods used to assess the two sites would be considered appropriate.

Former Spray irrigation Area

In response to the consent order requirement that the hydrogeologic study "determine the impact of brine pits and wastewater discharges on groundwater...," the former spray irrigation area was investigated by Inland Seas Engineering, Inc. (ISE), during July of 2002. The scope of the investigation was limited to determining if soils beneath the irrigation field had been impacted by the wastewater discharge during the first quarter of 2002. The assumption made by ISE is that if the soils are not impacted, then groundwater is not impacted. ISE calculated the maximum theoretical infiltration depth of the wastewater using an algorithm derived from the Environmental Protection Agency (EPA) guidance document entitled, "Superfund Exposure Assessment Manual" (EPA/540/1-88/001). Soil samples were then obtained from various depths beneath the

(EPA/540/1-88/001). Soil samples were then obtained from various depths beneath the spray irrigation area and analyzed for their chloride ion concentration. Additional soil samples were obtained to further characterize chloride ion concentrations in the soil column. Synthetic Precipitate Leaching Procedure (SPLP) analysis was also conducted to evaluate the mobility of chloride, sodium, and total phosphorus ions in soil. Results of the soil analysis indicate that the soils have not been impacted by the wastewater discharge.

WD staff agrees that the wastewater discharge has not impacted the soils; however, we are not convinced that this was an appropriate investigation for determining whether groundwater quality beneath the site has been degraded. We have several concerns regarding the method used for estimation of maximum theoretical infiltration depth of the wastewater. First, the calculation does not factor in soil characteristics such as permeability. Secondly, how was run-off calculated? And finally, what application rate was used in the calculation? Our understanding is that the volume of wastewater discharged to the site is unknown and the irrigation system was ineffective in achieving even distribution across the site. Please refer to your October 14, 2002 Hydrogeologic Assessment Report (paragraph 1 of Page 2).

The chloride ion, which is a good trace parameter for detecting the presence of cherry brine solution, is non-reactive within the soil column and highly mobile. WD staff believes it is probable that the discharge that occurred during the first quarter of 2002 has migrated to the underlying groundwater. It is our opinion that groundwater monitor wells should be installed at the former irrigation site to determine whether or not groundwater has been impacted from the wastewater discharge. Groundwater monitoring at the spray irrigation area will be a condition of an authorization to discharge at the site.

It is recommended that a work plan be submitted for review and approval prior to installing any monitor wells at the former irrigation site.

Former Northwestern Brining Pit Area

The investigation at this area was limited to analyzing soil samples to determine if brine had leaked from the 23 brining pits. According to your September 30, 2002 Soil Characterization Report, the pits had been emptied of brine for the past year. Given the high mobility of chloride within the soil column, it is our opinion that the groundwater quality beneath this area needs to be evaluated.

Monitor wells should be installed at this location according to an approved work plan.

Series 100, 200, 300 and 400 Areas

In general, the remaining hydrogeologic investigation of the site, as proposed, will consist of installing one upgradient monitor well and one downgradient monitor well at

two former brine pit areas and two existing brine pit areas (Series 100, 200, 300 and 400 areas). There also is proposed one background monitor well. It is proposed to sample only the downgradient monitor wells and the background monitor well for chloride. Two rounds of samples are proposed; based on the results, additional samples may be obtained.

Our recommendation is that all monitor wells, including the upgradient wells, shall be sampled for chloride. This will provide useful information to compare with the downgradient monitor wells.

Storage Lagoon

Monitor wells must be installed upgradient as well as downgradient of the lagoon to verify the integrity of the lagoon liner. Groundwater monitoring at the storage lagoon area will be part of the groundwater monitoring program should a new discharge permit be issued for WRS.

Please respond to these suggested Work Plan modifications by February 14, 2003. Feel free to call me at 517-335-3380 should you have any questions or comments regarding this matter.

Sincerely,

Douglas D. Thompson

Douglas D. Thompson
Permits and Technical Support Unit
Groundwater Section
Water Division

cc: Mr. Jim Janiczek, WD
Ms. Janice Heuer, WD
Mr. Tom Weston, WD